

In-Class Worksheet 3: Equivalence of NFAs and DFAs

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1 NFAs to DFAs

Write an NFA for the following language and then convert it into a DFA: $\{w \mid w \text{ is an even number of 0s or an odd number of 1s}\}$ (*or not and or xor*)

2 Constructions and NFAs

Consider the following languages

- $L_1 = \{w \mid w \text{ has less than 3 0s}\}$
- $L_2 = \{w \mid w \text{ has the substring } 0101\}$

Now:

- write down NFAs for each of these
- combine them to make NFAs for the following languages

- $L_1 \cdot L_2$
- $L_1 \cup L_2$
- L_1^*
- L_2^*